APPENDIX J

Declaration of Amy Orr

I, Amy Orr, hereby declare as follows:

1. I am currently employed at Human Genome Sciences, Inc. (HGS) as the GLP Compliance Coordinator in the Clinical Immunoassay Development Department. I have held this position at HGS since March 2006. Prior to assuming my current responsibilities, I served in various scientific capacities at HGS since joining the firm in June 1996.

2. Prior to joining HGS, I received my B.S. in Biology from James Madison University in 1987. I then completed the first year of the M.D. Program at Eastern Virginia Medical School before leaving in good academic standing in September 1988. From January 1989 until June 1996, I worked as a Laboratory Specialist in the Department of Internal Medicine, Division of Hematology/Oncology at Medical College of Virginia. A copy of my CV describing my experience and publications is attached. (Exhibit A).

3. In connection with preparing this declaration, I have reviewed my laboratory notebooks prior to August of 1998. Copies of relevant pages from one of my notebooks (#1155) are attached in Exhibits B and C, although portions have been redacted to remove the specific dates and information that does not relate to the relevant experiments.

4. Throughout 1998, I worked as a Research Associate in the Department of Cell Biology under the supervision of Dr. David Hilbert. One of my primary responsibilities was to evaluate the relative ability of selected human proteins to induce the proliferation of human B-cells (also known as B lymphocytes) in a human B-cell proliferation assay. The proteins I examined in

this assay were identified and prepared by other HGS scientists, then sent to our group for further evaluation.

5. Prior to August of 1998, I was provided with samples of antisera and monoclonal antibodies against neutrokine-alpha (TL7) (hereinafter referred to as anti-neutrokine-alpha (TL7) antibodies) in order to evaluate the relative ability of these antibodies to inhibit the human B-cell proliferation induced by neutrokine-alpha (TL7). This experiment was contemporaneously described on pages 106-114 of my laboratory notebook #1155 (Exhibit B) and demonstrated inhibition of neutrokine-alpha (TL7)-induced B-cell proliferation by an anti-neutrokine-alpha (TL7) antibody designated 9B6.

6. To conduct this experiment, I used a human B-cell proliferation assay that was designed to examine the amount of B-cell proliferation induced by neutrokine-alpha (TL7) in the presence of pansorbin (Pan), a known co-stimulatory signal. In this assay, B-cell proliferation was measured by quantifying the uptake of ^{3}H-thymidine, a radioactive thymidine isotope capable of incorporating into the DNA of actively dividing cells. I had previously shown on multiple occasions that TL7 induced human B-cell proliferation in this assay, as evidenced by increased ^{3}H-thymidine incorporation in neutrokine-alpha (TL7)-treated B-cells.

7. To determine the relative activity of selected anti-neutrokine-alpha (TL7) antibodies, I treated B-cells with neutrokine-alpha (TL7) and pansorbin either with or without an anti-neutrokine alpha (TL7) antibody or antisera. In this assay, if an anti-neutrokine-alpha (TL7) antibody inhibited neutrokine-alpha (TL7)-induced B-cell proliferation, I would observe lower levels of ^{3}H-thymidine incorporation in cells that had been treated with the antibody

than in cells that had not been treated with the antibody. Thus, by measuring the amount of radioactivity incorporated into the cells, I could determine the relative ability of the tested anti-neutrokine-alpha (TL7) antibodies to inhibit the human B-cell proliferation induced by neutrokine-alpha (TL7).

8. I began this experiment by preparing human tonsillar B-cells (Exhibit B, pages 106-107; refer to the pre-printed page numbers at the upper left & right corners). Page 107 of Exhibit B demonstrates purity of the B-cells by fluorescence-activated cell sorting (FACS). I then prepared working dilutions of various samples and reagents including: anti-neutrokine-alpha (TL7) antibodies (antisera and monoclonal antibodies), neutrokine-alpha (TL7) that had been expressed in a pC4 expression vector (TL7-pC4; sometimes referenced as TL7-pc4), B-cells, pansorbin (Pan), and IL-2, another known inducer of B-cell proliferation (Exhibit B, pages 108-109). Once the cells and reagents were prepared, I added B-cells and pansorbin, neutrokine-alpha (TL7) or IL2, and anti-neutrokine-alpha (TL7) antibodies (antisera or monoclonal antibodies) into the wells of several 96-well plates. Each antisera and monoclonal antibody was examined at seven and three different dilution factors, respectively, and each dilution was analyzed in triplicate (Exhibit B, page 110). To ensure the accuracy of the results, I also included the following controls: medium alone (no TL7 or pansorbin), pansorbin alone (no TL7), TL7-pC4 alone (no pansorbin), IL2 + pansorbin, and TL7-pC4 + pansorbin; none of the controls included the tested antibodies (Exhibit B, pages 110-114). A diagram of the setup for the four plates used in this experiment is also included on page 110 of my notebook (Exhibit B).

9. After setting up the 96-well plates, I placed the plates in the incubator for 72 hours. I then added ^{3}H-thymidine and returned the plates to the incubator for another 24 hours (Exhibit B,

page 110). I harvested the plates onto filter paper and allowed them to dry, then measured the radioactivity incorporated into the cells overnight (Exhibit B, page 111).

10. The following morning, I printed out and analyzed the results of the experiment. As expected from previous work, I again observed that neutrokine-alpha (TL7) induced B-cell proliferation (for example, Exhibit B, page 114, left side of graph, comparing Pan + TL7-pC4 to medium, Pan alone or TL7-pC4 alone; raw data can be found on page 111). With respect to the tested antibodies, I observed that one monoclonal anti-neutrokine-alpha (TL7) antibody (9B6) caused "a slight inhibition" of neutrokine-alpha (TL7)-induced human B-cell proliferation (Exhibit B, page 114, right side of graph; triangles; see also pages 111-112). The controls also worked as expected, showing that the experiment was properly run and giving me confidence in the accuracy of the results. (Exhibit B, page 114, left side of graph; see also pages 111-112). As was my typical practice, I recall orally communicating these results to my supervisor, Dr. Hilbert, shortly after obtaining them. Dr. Hilbert and his manager, Dr. Gianni Garotta, also reviewed and signed my notebook about two weeks later, indicating their review and understanding of the results of this experiment (Exhibit C, pages 123 and 85, respectively).

11. Based in part on these observations, HGS continued testing and developing additional anti-neutrokine-alpha (TL7) antibodies capable of inhibiting neutrokine-alpha (TL7)-induced B-cell proliferation. This work eventually resulted in HGS' LymphoStat-B™, a human monoclonal antibody to neutrokine-alpha that is currently in Phase 2 clinical development for the treatment of systemic lupus erythematosus and rheumatoid arthritis.

12. I declare that all statements made herein of my own knowledge are true and that all statements made on information or belief are believed to be true, and further, that these statements are made with the knowledge that willful false statements and the like so made are punishable by fine or imprisonment, or both, under Section 1001 of Title 18 of the United States Code, and that such willful false statements may jeopardize the validity of the application or any patent issuing thereon.

5/2/06
Date

Amy Orr